SANTA CRUZ BIOTECHNOLOGY, INC.

MKP-1 (V-15): sc-1199

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A key element in the pathway involved in the transduction of signals from activated protein-tyrosine kinase transmembrane receptors has been identified as the family of mitogen-activated protein kinases (MAP kinases). The most well known of these Ser/Thr kinases are ERK 1 and ERK 2. Mitogenic stimulation of cells triggers the activation of MAP kinases through phosphorylation of both tyrosyl (Y185) and threonyl (T183) residues. Phosphorylation of the T183 and Y185 ERK regulatory site is mediated by MAP kinase (MEK), which in turn is regulated by the proto-oncogene product Raf. Two highly related phophatases, designated MKP-1 and MKP-2, exhibit 59% sequence identity at the amino acid level and oppose the action of MEK by downregulating the kinase activity of ERK 1 and ERK 2. MAP kinase phosphatase-1 and -2 proteins function by dephosphorylating ERK 1 and ERK 2 at their T-E-Y regulatory motif. An additional phosphatase encoded by the DUSP2 gene, designated PAC-1, also functions to downregulate ERK 1 and ERK 2 kinase activity. PAC-1 is a nuclear protein whose expression is strongly induced in response to mitogen.

CHROMOSOMAL LOCATION

Genetic locus: DUSP1 (human) mapping to 5q35.1; Dusp1 (mouse) mapping to 17 A3.3.

SOURCE

MKP-1 (V-15) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of MKP-1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1199 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MKP-1 (V-15) is recommended for detection of MKP-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MKP-1 (V-15) is also recommended for detection of MKP-1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for MKP-1 siRNA (h): sc-35937, MKP-1 siRNA (m): sc-35938, MKP-1 shRNA Plasmid (h): sc-35937-SH, MKP-1 shRNA Plasmid (m): sc-35938-SH, MKP-1 shRNA (h) Lentiviral Particles: sc-35937-V and MKP-1 shRNA (m) Lentiviral Particles: sc-35938-V.

Molecular Weight of MKP-1: 40 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

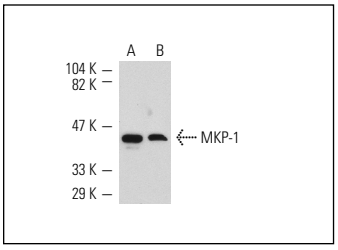
RESEARCH USE

For research use only, not for use in diagnostic procedures.

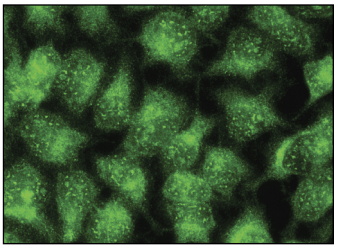
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



MKP-1 (V-15): sc-1199. Western blot analysis of MKP-1 expression in A-431 (**A**) and HeLa (**B**) whole cell lysates.



MKP-1 (V-15): sc-1199. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

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3. Rössler, O.G., et al. 2009. Thrombin induces Egr-1 expression in fibroblasts involving elevation of the intracellular Ca^{2+} concentration, phosphorylation of ERK and activation of ternary complex factor. BMC Mol. Biol. 10: 40.
4. Wang, J., et al. 2010. Selective unresponsiveness to the inhibition of p38 MAPK activation by cAMP helps L929 fibroblastoma cells escape TNF-α-induced cell death. Mol. Cancer 9: 6.
5. Smirnova, I.S., et al. 2010. Prosurvival and proapoptotic functions of ERK1/2 activation in murine thymocytes *in vitro*. Cell. Immunol. 261: 29-36.
6. Moumtzi, S.S., et al. 2010. Gene expression profile associated with oncogenic ras-induced senescence, cell death, and transforming properties in human cells. Cancer Invest. 28: 563-587.
7. Kristiansen, M., et al. 2010. Mkp1 is a c-Jun target gene that antagonizes JNK-dependent apoptosis in sympathetic neurons. J. Neurosci. 30: 10820-10832.
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9. Regueiro, V., et al. 2011. Klebsiella pneumoniae subverts the activation of inflammatory responses in a NOD1-dependent manner. Cell. Microbiol. 13: 135-153.